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## THE PSYCHOLOGY OF THE NEW *BRITANNICA*

By E. B. TITCHENER

The psychological centre of the new *Britannica* is the comprehensive article by Professor Ward, which has now, we may suppose, taken on its final form. The article was first written for the ninth edition,<sup>1</sup> and appeared in 1886. It was written, therefore, at the age when, as its author reminds us, a man has already become 'a bundle of habits;' there was nothing tentative about it, no suggestion of the rough draught of a system; every topic had its appointed place, and every argument showed mature reflection. It was written also, Professor Ward tells me, under some pressure of time; and this circumstance had its good effect; the essay is *aus Einem Gusse gegossen*. Recognition came at once: the late Professor Bain, who had been warmly praised and soundly pummelled, replies in the same knightly fashion: "the thorough knowledge of previous works, the freshness of the handling, the never-failing acuteness, the light thrown upon many of the dark places of mental science,—constitute the work a signal achievement of philosophical ability."<sup>2</sup> And the influence of the 'Psychology' has steadily widened; one might, indeed, in a venturesome mood, bring it into comparison with Brentano's *Psychologie vom empirischen Standpunkte*; for the relation which Professor Ward sustains to current British associationism is not unlike that of Brentano to the Wundtian school in Germany.

A second article, prepared for the supplement which took the place of the tenth edition of the *Britannica*, appeared in 1902. The intervening years were notable in the history of psychology; they were years of rapid horizontal expansion, during which laboratories were equipped, journals were founded, and comparative psychology and mental pathology made unwonted progress. It may well be the case that psychology outgrew its strength, that a 'thorough scrutiny of methods' is needed before the new results 'can be safely or

<sup>1</sup> The author had already published *A General Analysis of Mind* (Journal of Speculative Philosophy, XVI. 1882, 366), *Objects and their Interaction* (*ibid.* XVII. 1883, 169), and the first two articles entitled *Psychological Principles* (Mind, O. S. VIII. 1883, 153, 465).

<sup>2</sup> Mr. James Ward's "Psychology," Mind, O. S. XI. 1886, 457.

systematically incorporated into the science:’ at any rate there is good material mixed with the bad, sound with the flimsy: and the superficial extension of psychology, the widespread adoption of the psychological attitude, is itself a sociological phenomenon of the first importance. Professor Ward is, however, less interested in these things than in the ‘signs of life’ shown by the ‘old’ psychology. He had himself discussed, in the *Naturalism and Agnosticism* of 1899, the great questions of the perception of an external world and of the relation of body and mind. He had also published in 1893-4<sup>3</sup> two articles on *Assimilation and Association*, in which Höffding’s ‘quality of familiarity’ and ‘tied ideas’ were turned to account for a genetic study of ideation. James’ apologetic paper on the ‘Physical Basis of Emotion’ came out in 1894; von Ehrenfels’ *Gestaltqualitäten* appeared as ‘forms of combination’ in Stout’s *Analytic Psychology* (1896). It is still the ‘old’ psychology, then, that the supplementary article expounds and advances; the sections on the Experimental Investigation of Memory and on Comparative Psychology are as nearly perfunctory as the writer’s critical acumen and philosophical conscience will allow. And so we are not surprised—though many of us, no doubt, have been disappointed—to find that the revised article of 1911 is, in all essentials, simply a skilful blend of the articles of 1886 and 1902.

The supplementary article occupies 17 pages; the original article required 49. The article of 1911 occupies 58 of the slightly larger pages of the new *Britannica*.

The Introduction (§ 1, The Science of “Mind;” § 2, Standpoint of Psychology) is substantially the same as in the article of 1886. Here, as throughout,—the statement may be made once for all,—the author has revised with extreme care; everywhere there is weeding, pruning, dovetailing; but the substance of the two preliminary sections is unchanged. Under *General Analysis* we have first, in § 3, the discussion of Experience from the tenth edition: the paragraph on Pragmatism is omitted. Sections 4-8 then practically repeat the ninth edition; the fine-print discussions of the subjectivity of sensations, of the connection between subjective attention and objective intensity, and of the non-presentability of feeling and attention are, however, omitted. A new § 9 is devoted to *Attention*.<sup>4</sup> The *Theory of Presentations* opens (§§ 10-12) with the familiar treatment of the Psychological Individual, the Presentation Continuum, and Retentiveness; an interpolated § 13 gives a brief note on Assimilation; and the discussion of Relativity follows (§14), thus changing places with that of Subconsciousness. Professor Ward has entirely rewritten this latter section, §15, and has raised it—if not, as Bain counselled, from brevier to pica, at least—from brevier to long primer: the core of

<sup>3</sup> Mind, N. S. II. 1893, 347; III. 1894, 509. The tenth and eleventh editions give the dates as 1894-5. The proof-reading of the latter edition is far from impeccable.

<sup>4</sup> Cf. *Psychological Principles*, III. Mind, O. S. XII. 1887, 45.

doctrine remains unchanged.<sup>5</sup> Section 16, *Sensation, Movement and the External World*, owes its change of title, its introduction, and its conclusion, to the tenth edition; the treatment of the characteristics of sensation is expanded from the ninth. *Perception* (§§ 17-20) and *Imagination or Ideation* (§§ 21, 22) stand with a few omissions—compensated, as most of the omissions of the article are, by later additions—as they stood before. A new § 23, on the *Genesis and Development of Ideation*, comes in from the tenth edition. Sections 24, 25, *Mental Association and the Memory-Continuum*, and §§ 26-29, *Reminiscence and Expectation: Temporal Perception*, repeat the ninth edition; a critical note is added on the relation of successive to simultaneous association, and on the notions of 'form' and 'law' of association. Then comes the excursus (from the tenth edition) on *Experimental Investigations concerning Memory and Association*. The sections on *Feeling* (§§ 31-33) are as they were. *Emotion and Emotional Expression*, from the tenth edition, follows as § 34; *Emotional and Conative Action*, § 35, stands unaltered. The treatment of *Intellection and Categories* is extended by the introduction of § 39, *Objects of Higher Order: their Analysis and Genesis*, from the tenth edition; otherwise there is practically no change in §§ 36-42. *Belief* is then given a separate heading, and raised to the dignity of long primer. The subject-matter of *Presentation of Self, Self-Consciousness and Conduct* (§§ 44-46) has been newly articulated, and the concluding note on *Freedom* has been rewritten. Section 47, *Relation of Body and Mind*, comes from the tenth edition, as does also the appendix, § 48, on *Comparative Psychology*. A revised list of *Authorities* brings the article to an end.

"Systematic psychology," Professor Ward has remarked, "is neither bulky nor liable to change every half-dozen years;" and again, "The concepts of general psychology are presupposed in the many special departments, . . . and will be presupposed in whatever new developments of the science the future may have in store." These statements may be taken as the text of his new 'Psychology.' From the point of view of systematic psychology, the only important additions are to be found in the introductory §§ 3, 9, 16 (*Experience, Attention, Definition of Sensation*), and in §§ 23, 39, which deal with assimilation and form of combination; and in these sections we have simply a clarification and direct extension of the doctrine of 1886. As for the remaining new matter,—while we are all grateful for anything that Professor Ward cares to write,—I cannot but think that from his own standpoint it is irrelevant, and that from the standpoint of the 'special department' it is incomplete. Let me quote, to begin with, a passage from the Editorial Introduction to this eleventh edition of the *Encyclopaedia*. "Those earlier contributions have been preserved," we read, "which are of the nature of classics in the world of letters. By a selective process, which, it is believed, gives new value to the old material

<sup>5</sup> Cf. *The Present Problems of General Psychology*, *Philos. Review*, XIII. 1904, 619.

—by the revision, at the hands of their own authors or of later authorities, of such articles or portions of articles as were found to fit accurately into their several places—or by *the inclusion under other headings of a consideration of controverted questions on which the writers may have taken a strong personal view, itself of historical interest*—their retention has been effected so as to conform to the ideal of making the work as a whole representative of the best thought of a later day.”<sup>6</sup> Admirable!—but, so far as psychology goes, more honored in the breach than in the observance. Professor Ward takes a strong personal view of psychology, which has much more than an historical interest; all psychologists are his debtors for its expression. But he treats of Experimental Psychology in an excursus, and of Comparative Psychology in an appendix to his article; and the specialist looks in vain for the special articles *Experimental Psychology* and *Comparative Psychology*. Those students of psychology—and, rightly or wrongly, there are many of them—who care less for epistemological principles than for the actual *facies* of the science, will hardly agree that the Editor has fulfilled his promise. Again, even if an enlightened view of the Relation of Body and Mind ‘makes psychological revision inevitable,’ still the topic itself belongs, on Professor Ward’s own showing, to Psychophysics,—of which more in a moment; while he would be the last to deny either that the issues in this problem are controverted or that his handling of it is strongly personal.<sup>7</sup> There remains the discussion of the James-Lange theory of emotion (§ 34). This, if retained in full, should have been incorporated in a special article *Emotion*: there is, by the way, no such article: as it stands, it interrupts the general argument; the reader is jerked to an unfamiliar standpoint.

I turn back once more to the Editorial Introduction,—to the section that deals with formal arrangement. “Under the name of the common subject of the science as a whole,”<sup>8</sup>

<sup>6</sup> Cf. I. xiv. The italics are mine.

<sup>7</sup> Readers of Professor Ward’s recent writings will remember his insistence on the distinction between ‘psychological’ and ‘psychophysical,’ and on the priority of general psychology to ‘physiological psychology.’ Yet in the new article ‘Psychology’ (p. 583), as in the old (p. 69), it is ‘on the whole a satisfactory explanation’ of the pleasurable and painfulness of combinations of colors that “the one arrangement secures and the other prevents perfect retinal activity!”

<sup>8</sup> Will it be objected that psychology is not a ‘science’? But Professor Ward gives as its formal definition ‘the science of mind;’ and the Editorial Introduction makes but one, quite casual, reference to Philosophy. See also Note 12 below.

its history and general aspects are discussed, but the details concerned with the separate scientific questions which fall within its subject-matter . . . are relegated to distinct articles, to the headings of which the general account becomes, if required, a key or pointer. This arrangement of the scientific material—a general article acting as pointer to subsidiary articles, and the latter relieving the general account of details which would overload it—has been adopted throughout the Eleventh Edition; and in the result it is believed that a more complete and at the same time more authoritative survey has been attained, within the limits possible to such a work, than ever before.”<sup>9</sup> In other words, the present edition follows the ‘dictionary plan,’ whereas the ninth edition followed the ‘single-treatise plan’ of an Encyclopaedia. We shall, therefore, expect to find three groups of subsidiary articles: (1) those which cover the ‘special departments’ of psychology,—experimental psychology, psychology of the abnormal, and so forth; (2) topical articles, corresponding to the chapter-heads of a systematic psychology (sensation, attention, association) and to the more important subdivisions of lines of departmental knowledge (hypnotism, psychology of adolescence); and (3) biographical articles. Let us see what, under these three headings, the twenty-eight volumes have to offer.

(1) I have said that there is no article *Experimental Psychology*; neither is there a *Physiological Psychology*. *Psychophysics*—which in the ninth edition curtly enjoins the reader to ‘see Weber’s Law’—now heads an article; but the article has only 20 lines (about half as many as are assigned to *Teacaddy*); it opens with a false etymology, mentions a few leading names, and ends with a random string of instruments and fields of investigation. This treatment (or lack of treatment) is the more regrettable, since many of the topical articles refer in somewhat sweeping terms to ‘modern physiological psychology’ and to ‘psychophysical researches.’<sup>10</sup> I have said, again, that there is no article *Comparative Psychology*; neither are there articles *Class Psychology*, *Collective Psychology*, *Ethnic Psychology*, *Genetic Psychology*, *Individual or Differential Psychology*, *Psychopathology*, *Social Psychology*. The seeker after knowledge must go either to the topical articles (the range of which will appear in what follows), or to articles written from the standpoint of anthropology, ethnology, phil-

<sup>9</sup> Cf. I. xviii.

<sup>10</sup> So, e. g., *Affection*, *Association of Ideas*, *Attention*, *Extension*, *Introspection*, etc. Other articles, in which we might expect an experimental reference are silent in the matter: so *Cold*, *Perception*, *Rhythm*, *Space and Time*, etc.

osophy, sociology—of some discipline that is emphatically not psychology, however closely 'related' to it in a classification of the sciences.<sup>11</sup> Psychology, indeed, seems to have shown but faintly above the editorial horizon; the fundamental articles on *Evolution* and *Science* ignore it.<sup>12</sup> There is no attempt at a *History of Psychology*, though both *Ethics* and *Logic* receive historical treatment.

There is no article *Applied Psychology*; and there are no articles *Educational Psychology*, *Juristic Psychology* (psychology of testimony, case analysis), *Psychotherapeutics*. There is an elaborate article *Phrenology*<sup>13</sup> (A. M.);<sup>14</sup> and the expression of emotion is treated under *Physiognomy* (A. M.).

It is obviously far more difficult to say what an Encyclopaedia contains than to point out what titles it omits. And the difficulty is increased, in the present instance, by the lack of an Index. I understand that the forthcoming Index Volume will supply a full page-index of names and subjects. This will doubtless convict me of many mistakes: I do not think, however, that it will make the following notes superfluous.

*Psychotherapeutics*.—There is nothing to the point in the articles *Medicine* and *Therapeutics*. The article *Hysteria* (J. B. T.; E. B.) says nothing of psychoanalysis. *Christian Science* mentions the recent development of psychotherapy; and *Faith Healing* (N. W. T.) refers all forms of mind-cure (on which there is no article) to suggestion. The articles on *Hypnotism* and *Suggestion* will occupy us later.

*Juristic Psychology*.—The articles *Attestation*, *Evidence*, *Oath* and *Witness* make no psychological reference. The article *Criminology* (A. G.) refers briefly to the psychology of the criminal.

*Educational Psychology*.—The article *Child* remarks: "Into the psychological characteristics and development of the child and all the interesting educational problems involved it is impossible to enter here;" the writer accordingly contents himself with a list of books and a word of general caution. The article *Education* (J. We.) makes a bare reference to the psychological differences between Froebel and Herbart. *Habit* is merely defined; *Fatigue* does not appear. I have found nothing on the subject of *Mental Tests*. The article *Interest* is not psychological. Nor—to pass to another department of applied psychology—is the article *Advertisement*.

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<sup>11</sup> The article *Classification* makes mention of a 'Carl Wundt,' whom I take to be a portmanteau-person, compounded of Carl Stumpf and Wilhelm Wundt.

<sup>12</sup> On the other hand, the article *Philosophy* accepts the "definitive establishment of psychology as an independent science," in order to mark it off sharply from epistemology.

<sup>13</sup> The subject is also discussed under *Brain*. Several articles upon anatomical and physiological subjects (lists are given under *Anatomy* and *Physiology*), as well as the article *Neuropathology*, are of interest to psychologists.

<sup>14</sup> The initials given here and in later references to psychological articles are those of the authors; the names will be found in the Appendix to this review. Many articles are unsigned.

*Genetic Psychology* next suggests itself. *Adolescence* is treated from the standpoints of hygiene and education: *Children's Games*, *Infancy*, *Infant*, are not psychological articles; *Play* tantalises us by a reference back to *Child*. We may add here a mention of the brief discussion of *Imitation*,<sup>15</sup> which in turn leads us to the topic of *Instinct* (C. L. M.) This is made a matter exclusively of animal psychology; at least, there is no account of human instincts. The author of the articles writes also upon *Intelligence in Animals*.<sup>16</sup>

*Social and Ethnic Psychology* are almost wholly merged in *Anthropology*, with the result that ethnic psychology has the better of the bargain. There are brief remarks on psychology at the beginning and end of the article *Sociology* (B. K.). There is no psychological discussion of *Custom*. The first part of the article *Philology* ('The Science of Language in General,' W. D. W.) is largely psychological. The article *Religion* (J. E. C.; R. R. M.) declares that the origin of religion must be sought conjecturally through psychology, and has a section entitled 'Psychology of the Primitive Attitude towards the Sacred': otherwise there is no explicit discussion of the religious consciousness. The article *Conversion* does not supply this deficiency. *Animism* (N. W. T.) has a section upon the origin of religion; and a long series of related articles—beginning with *Anthropology* (E. B. T.) itself—contain materials for ethnic psychology. I have probably not noted them all; I mention *Costume*, *Death*, *Divination*, *Family*, *Fetishism*, *Folklore*, *Funeral Rites*, *Image Worship*, *Magic*, *Mythology*, *Prayer*, *Ritual*, *Sacrifice*, *Salutations*, *Totemism*. These articles are for the most part of a high order of merit; the psychologist can only regret that the psychological aspect of their subject-matter does not receive greater emphasis, and that they are not more closely articulated with *Psychology*. The article *Aesthetics* (J. S.) is written by a psychologist and from the psychological point of view; and a good deal is said of the psychology of art, social as well as ethnic, in the article *Fine Arts* (S. C.). *Humour* is not treated psychologically; *Wit* has no article.

*Collective Psychology* finds incidental mention in the articles *Economics*, *Imitation*, *Religion* and *Suggestion*. *Differential Psychology*, whether of the class or of the individual, has been strangely neglected; in particular, there seems to be no discussion anywhere of the psychology of sex; the article *Sex* is purely biological, the article *Prostitution* (save for its brief introduction) purely sociological. *Visualisation* does not appear; and the articles *Galton*, *Image*, *Imagination* are silent regarding it.

There remain *Psychology of the Abnormal* and *Psychopathology*. The article *Dream* (N. W. T.) is of a general, somewhat popular sort; no attempt has been made to correlate it with *Psychology*, and Freud is mentioned only in the bibliography. *Hypnotism* (W. McD.) is treated sympathetically and at length. I should demur to the statement: "As a method of psychological investigation hypnotism has proved . . . capable of throwing much light on the con-

<sup>15</sup> *Imitation* is also discussed under *Fine Arts* and *Philology*; *Play* under *Aesthetics* and *Fine Arts*.

<sup>16</sup> The article *Heredity* is biological; the word 'psychological' occurs only in a list of transmitted characters. *Mendelism* and *Variation and Selection* are also biological. The latter article speaks of biometrics and of correlation, which have no special articles. For methods of calculating correlation we are referred to an *Error, Law of*, which is not included in the eleventh edition. We are also referred to *Probability* (F. Y. E.), which contains a great deal that is of value to the psychologist. *Statistics* is of psychological interest only as it deals with certain elementary points of method.



stitution of the mind, has opened up a number of problems of the deepest interest, and has done more than any other of the many branches of modern psychology to show the limitations and comparative barrenness of the old psychology that relied on introspection alone and figured as a department of general philosophy." The last clause, at any rate, exalts unduly the importance of the hypnotic method and underrates the value of pre-experimental psychology. The section on Theory strikes me as inadequate: as does also, from the psychological side, the same writer's article *Suggestion*. He gives a very full account of *Hallucination*.—The article *Dissociation* is not psychological. The article *Sleep* (J. G. M.) is reprinted without change from the ninth edition: one is glad to read again the classical description of the onset of sleep. The unsigned article *Somnambulism* is by the same author, reprinted from the earlier article *Sleep*. The brief articles *Catalepsy* and *Ecstasy* repeat, with some omissions, the previous articles of the same title; *Fascination* is new.

The article *Aphasia* (J. B. T.) has been rewritten, and gives a sufficient introduction to the subject, which is also discussed under *Brain*. *Medicine* makes a brief reference to morbid psychology. The articles *Hysteria*, *Insanity*<sup>17</sup> (J. B. T.; J. M.; L. C. B.), etc., are conceived, very naturally, from the standpoint of the psychiatrist rather than from that of the psychologist. There is, of course, psychology in them; but it is not worth while to consider them here in detail.

On the other hand, this is perhaps as good a place as any in which to call attention to the articles—many of them long and elaborate—devoted to *Psychical Research* (A. L.). I have noted *Apparitions* (A. L.), *Automatic Writing* (F. P.), *Clairvoyance* (N. W. T.), *Crystal Gazing* (A. L.), *Hauntings* (A. L.), *Medium* (N. W. T.), *Poltergeist* (A. L.), *Premonition* (F. P.), *Retrocognition* (F. P.), *Second Sight* (A. L.), *Spiritualism* (E. M. S.), *Subliminal Self* (W. McD.)—an article devoted wholly to Myers, *Telepathy* (N. W. T.). *Psychical Research* also figures, more or less largely, in the articles *Automatism* (N. W. T.), *Divination*, *Dream*, *Hallucination*, *Hypnotism*, *Possession* (N. W. T.), *Trance* (W. McD.). Would that the British Psychological Society had urged its claims upon encyclopaedic space as effectively as the Society for Psychical Research!

Are there not, however, other general articles, subsidiary to the 'key' article *Psychology*? There is an article *Naturalism* (J. W.), which deals in part with psychological theory; it is brief, polemical, and enjoins us to 'See also *Psychology*.' There is an unsigned three-sentence article *Parallelism*, *Psychophysical*: it ends, 'See *Psychology*.' There is a short unsigned article *Presentationism*, mainly concerned with Professor Ward's views: 'See especially the article *Psychology*.' There is a still shorter note on *Sensationalism*:

<sup>17</sup> In the course of correspondence regarding the eleventh edition, Dr. L. N. Wilson called my attention to the fact that Vol. XIV. of the set in the Clark Library repeats the Insanity statistics of the ninth edition, although the date assigned is 1901. I find, by personal examination and by further correspondence, that some sets have the correct, others the incorrect figures. (On p. 600 the Total of the first line of the table should be 48,882; if it is 29,452 the statistics of 1871 have been repeated.) Plainly, the plates have been changed since the Encyclopaedia was issued. I have made inquiry at the New York office of the Cambridge University Press, but have so far received no reply.

'See *Psychology*.' The reader may turn also, as he is directed, to *Empiricism* and *Phenomenon*: he will find cold comfort. There is no article *Interaction*.

There is an article *Matter*, but there is no article *Mind*, although a critical and historical account of what is, by the definition of the 'key' article, the subject-matter of psychology would have been most welcome. There is an article *Life*, but no article *Consciousness*, although again a critical and historical essay on "the vaguest, most protean and most treacherous of psychological terms" would surely have been in place. I find no articles *Experience*, *Explanation*, though these are suggested by the contents of the central article. *Causation* is too broadly treated to serve psychological purposes; and the note on *Teleology* does not refer to psychology at all.

There is no article on *Scientific Method*. The brief note on *Introspection* is certainly inadequate; it is also, I think, misleading.

There are no articles *Experiment*, *Laboratory*. I have found hardly anything upon psychological apparatus: I recall only the article *Stereoscope* (C. P.),<sup>18</sup> and the cut of Sieveking's aesthesiometer under *Touch*. A page of specifically psychological instruments would not, however, have been space wasted. No reference is made to *Scientific Congresses*. The article *Periodicals* does not mention, under the heading United States, any psychological journal.

(2) I have already trespassed somewhat upon this second division, of topical articles. Coming now to the main body of such articles, I note first a short article *Faculty*.<sup>19</sup> There are no articles *Mental Process*, *Psychosis*.

*Sensation* does not receive collective treatment. The six main articles, *Vision*, *Hearing*, *Touch*, *Taste*, *Smell* and *Equilibrium* are contributed by Professor J. G. McKendrick. One could not expect the veteran physiologist to plough afresh the immensely extended field of sense-psychology; neither could one desire to see the articles of the new edition taken altogether out of his hands. It is, however, a thousand pities that his work was not gone over by an experimental psychologist of the younger generation. The articles *Vision* and *Hearing*, in particular, are a lamentable blot upon the scholarship of the Encyclopaedia.

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<sup>18</sup> This article itself (which bears somewhat too obvious marks of translation from the German) is written from the physical point of view, though it includes psychological discussion. Other physical articles (*Chronograph*, *Photometry*, etc.) may be useful to the psychologist. The article *Phonograph* figures a number of vowel curves.

<sup>19</sup> Mental faculties are also discussed under *Brain*.

In dealing with the departmental articles I have not referred to the tenth edition. It is now necessary to say that the six main articles on sensation are, like the central article *Psychology*, reproduced in essentials from the ninth and tenth editions together. I have no objection whatever to the inclusion of the older results; it is well to be reminded of things that, in the hurry of current research, one is too ready to forget. But the blend of old and new, in these articles, leads too often to muddle, even to contradiction. Here are two statements from *Smell*: (1) "If the two nostrils are filled with different odorous substances there is no mixture of the odors, but we smell sometimes the one and sometimes the other;" (2) "If, by means of a tube, an odor is conveyed into one nostril, while an odor of a different kind is directed into the other, there may be either a compound sensational effect, a sort of double-odor, or one odor may so predominate as entirely to destroy the other. The fusion of odors is not complete, and it is similar to the effect of combining, say, blue and red, in stereoscopic vision." The first of these statements, from Valentin, occurs in the ninth edition; the second appears in the tenth. If, now, we are curious enough to turn to the treatment of binocular color-mixture under *Vision*, we find this: (3) "Blue light may be admitted by the one eye-piece and red by the other; and on the convergence of the two, a resultant color, purple, will be observed. This may be termed the binocular vision of colors. It is remarkable that by a mental effort this sensation of a compound color may be decomposed into its constituents, so that one eye will again see blue and the other red" (from the ninth edition). Comment seems unnecessary.

Turn to *Taste*. (1) "Careful observations have shown that taste is only experienced when the sapid substance is allowed to come into contact with the taste-body, and that the sense is absent or much weakened in those areas of mucous membrane where these [*sic*] are deficient;" (2) "Further experiments with capillary tubes show that fungiform papillae destitute of taste buds, and areas of the surface of the tongue having neither papillae nor taste buds, may still, when stimulated by sapid substances, give rise to tastes:" the ninth and tenth editions again refuse to blend. Once more: (1) "Rapidly interrupted induced currents, which produce little or no electrolysis, may also excite taste" (tenth); (2) "The action of the interrupted current on the terminal organ is analogous to the action of sweet or bitter substances" (tenth): (3) "Rapidly interrupted currents fail to excite the sense" (from Grünhagen, in ninth). The three statements last quoted appear on the same page.

Turn to *Touch*. (1) "Pain is not a sensation excited by irritating the end organs either of touch or of temperature, nor even by irritating directly the filaments of a sensory nerve" (tenth); (2) "This sensation [pain] cannot be supposed to be excited by irritations of the end organs of touch, or of specific thermal end organs (if there be such), but rather to [*sic*] irritation of ordinary sensory nerves" (ninth).—I cannot devote more space to these articles. The essay on *Equilibrium* (new in the tenth edition) is fairly satisfactory;<sup>20</sup>

<sup>20</sup> One passage, at any rate, calls for comment. "A bird, on the other hand [as compared with the human acrobat], depends largely on visual impressions, and it knows by experience that if launched into the air from a height it can fly. Here, probably, is an explanation of the large size of the eyes of birds." (1) The fact that the bird's eye is relatively larger than our own, or than that of mammals generally, might depend upon the difference of type between the structures; the avian eye cannot be thus directly equated to the mammalian. (2) Are the eyes of birds—

the articles *Smell*, *Taste*, *Touch* are unsatisfactory; *Touch*, especially, is confusedly written.

I have to justify, so far as space permits, my criticism of *Hearing*: here, then, are a few points. (1) The *tensor* is credited with a twofold function: it serves as mechanism of accommodation to pitch and it acts as a safety-appliance for intensity. Thus are rival theories reconciled,—though how the muscle discharges its double duty we are, of course, not told. I need not say that recent work has put the accommodation-theory out of court. (2) The vestibular organs are “organs connected with the perception of sounds as sounds, without reference to pitch or quality.” “These structures, however, are concerned rather in the sense of the perception of equilibrium than of sound.” (3) The *DL* of pitch is given as “one sixty-fourth of a semitone,” and again as “one-thousandth of the total number of vibrations,”—without any reference to pitch-number. (4) “When we listen to beats of considerable intensity, produced by two adjacent tones of sufficiently high pitch, the ear may follow as many as 132 intermissions per second.” “Beyond 132 per second, the individual impulses are blended into one uniform auditory sensation.” There is, however, a region of roughness or harshness, between sheer intermission and uniform blending; and Helmholtz’ limit of 132 has been revised by later observers. (5) R. König’s experiments with high forks are said to have ‘settled the question’ of beat tones: that is, the work of Schaefer and Abraham (1901) is ignored. (6) Consonance and dissonance are explained by Helmholtz’ theory of beats, Stumpf is not mentioned in the article. The usual confusion of the two editions shows in the sentence: “Hitherto we have considered only the audition of a single sound, but it is possible also to have simultaneous auditive sensations, as in musical harmony:” two sections earlier there is a discussion of Dissonance (concord and discord).<sup>21</sup> (7) The following statement is amazing. “It is possible by means of beats to measure the sensitiveness of the ear by determining the smallest difference in pitch that may give rise to a beat. In no part of the scale can a difference smaller than 0.2 vibration per second be distinguished. The sensitiveness varies with pitch. Thus at 120 vib. per second, 0.4 vib. per second, at 500 about 0.3 vib. per second, and at 1000, 0.5 vib. per second can be distinguished. This is a remarkable illustration of the sensitiveness of the ear.” It is, unless I have read the sentences wrongheadedly, a remarkable illustration of misunderstanding

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that is, of course, the eyeballs—relatively larger than those of mammals? In many cases, obviously; but I doubt the generalisation. There is also a patent difference in size between the eyes of nocturnal and of diurnal birds. (3) The ‘here’ of the last sentence is equivocal; it seems, however, to refer to both of the preceding clauses, to dependence on visual impression and to knowledge of ability to fly. But birds learn to fly, though they may learn quickly; and can we say, in any proper sense, that the adult bird ‘knows’ that it can fly? (4) Do dependence on visual impressions and empirical knowledge of power of flight ‘explain’ the size of the visual organ? It would seem rather that structure and function of the organs of flight, and structure and function of the organs of vision, are all determined interdependently by conditions which it is the business of the biologist to ascertain in detail.

<sup>21</sup> In the article *Voice* (J. G. M.) there is a new section, entitled “Vowel Tones.” The author is concerned with the alternative of relative *vs.* fixed pitch of the characteristic partials, and decides by a compromise. This preoccupation forbids any clear statement of the Hermann-Pipping controversy: not, indeed, that the author is unique in that regard, for a sort of fatality of confusion seems to attach to the topic. But, at all events, the reader of the article will get no notion of the difference between the fixed-pitch theories of Helmholtz and Hermann; he may even be led to suppose that Fourier analysis reveals inharmonic partials.

on the part of the author. I take him to say that the *DL* in question are obtained from simultaneously sounding tones, and that they represent the differences of pitch-number at which a beat first becomes audible. To distinguish 1 beat in 5 seconds, even 1 beat in 2 seconds, thus testifies to the ear's sensitivity: and yet we know that the ear can recognize 1 beat in three minutes! This precious bit of tonal psychology has been taken over, uncorrected, from the tenth edition.

It is, I think, needless to go further; if these things lie on the surface, we shall not be likely to find improvement by digging deeper into the article. I therefore pass to *Vision*. (1) There is, first, a blunder in the interpretation of Newton's color-triangle; the ordinates of points within the triangle are taken, not as levers with masses attached, but as representations of amounts of color. (2) The negative after-image is ascribed, roundly, to fatigue. We are, therefore, ready for the statement: "The Young-Helmholtz theory explains the appearance of the consecutive colored images." We are not prepared for the later statement: "Hering's theory accounts satisfactorily for the formation of colored after-images." In point of fact, Hering's theory is incompatible with the doctrine of fatigue; and the negative after-image is precisely one of the facts of vision that Helmholtz fails to explain. (3) "The yellow spot in the centre of the retina is the most sensitive to light . . . Towards the anterior margin of the retina sensitiveness to light becomes diminished." These statements may be taken as true for light adaptation, though it is to be remembered that accurate observations have been made only with colored lights. The statements are, on the other hand, patently untrue as regards dark adaptation. The phenomena of adaptation are not mentioned in the article.<sup>22</sup> (3) "An impression lasts on the retina from 1/50 to 1/30 of a second." If a general statement is permissible, it would be more nearly true to say 1/70 to 1/10 of a second. (4) "Red appears to a red-blind person as a dark green or greenish yellow, yellow and orange as dirty green:" it is odd to read such a statement in the year of grace 1911! (5) "Aubert has stated that the minimum intensity [of light required to excite the retina] is about 300 times less than that of the full moon." He has: but later observers have pointed out that he considerably underestimated the intensity of moonlight; and his determinations have, at the best, no general validity. (6) A diagram is offered for the study of the blind spot, and the reader is instructed to "move the book towards and away from the eye." The dimensions of the diagram are such that, as a rough calculation shows, the 'round spot' disappears at a distance of some four inches from the eye. "The blind spot . . . is sufficiently large to cause a human figure to disappear at a distance of two metres." Helmholtz said *face*. (7) Hering's explanation of contrast is not mentioned; the references are to Helmholtz and Plateau. (8) Nothing is said of the functions of the rods, of twilight vision, of the *Duplizitätstheorie*. (9) The theory of visual space perception differs from that given in the central article (to which no reference is made); the treatment of illusion is meagre (there is no article *Illusion*); the brief note on apparent solidity does not refer to the article *Stereoscope*. For that matter, no one of these six articles is provided with a bibliography.

<sup>22</sup> The special articles treat *Adaptation* from the literary and biological points of view, and *Accommodation* only as a theological term.

There is, in the article *Vision*, a cross-reference to *Color* (J. R. C.). And the reader is plunged at once into a pleasing confusion. "Every color," says J. G. M., "has three qualities: (1) *hue* or tint, such as red, green, violet; (2) *degree of saturation*, or purity, according to the amount of white mixed with the tint, as when we recognise a red or green as pale or deep; and (3) *intensity*, or luminosity, or brightness, as when we designate the tint of a red rose as dark or bright." "Colors," says J. R. C., "differ in three respects, which Maxwell calls *hue*, *shade*, and *tint*. All hues can be produced by combining every pair of primaries in every proportion. The addition of white alters the tint without affecting the hue. If the color be darkened by adding black or by diminishing the illumination, a variation in shade is produced." Physiologist and physicist are thus perplexingly at odds; and neither has troubled to consult the psychologist. The article *Color* remarks, further: "Helmholtz has shown that the only pair of simple spectral colors capable of compounding to white are a greenish-yellow and a blue." When, and where? Helmholtz' complete table has persisted through the three editions of the *Optik*, and is reproduced by J. G. M. under *Vision*!

There are no articles *Kinaesthetic Sensation*, *Organic Sensation*; and the article *Joints* recognises articular sensation only in cases of injury or disease. *Muscular Sense* has a fine-print paragraph under *Touch*. We find a short, colorless article *Hunger and Thirst*, and a special article *Pain*,—although pain has been discussed twice over under *Touch*. There, however, nothing is said of pain spots; and, indeed, the article *Pain* agrees as little with J. G. M. as he, at his different dates, agrees with himself.—

It is, by the way, unfortunate that the cross-references in the psychological articles have not been more carefully scrutinised. Thus, the article *Pain* refers us to *Psychology*, *Aesthetics*, *Nervous System*, *Sympathetic System*. The reference to *Psychology* is correct: we read there of pleasure-pain, of organic pains, of cutaneous pain spots. But nothing about pain will be found under *Aesthetics* (except the passing statement that aesthetic enjoyment is free from certain 'painful elements'); nothing under *Nervous System*; nothing under *Sympathetic System*. The proper references are to *Affection* and *Touch*, neither of which is mentioned: *Brain* might have been added. The article *Attention* refers us to *Psychology*, *Brain*: but the latter article is discreetly silent on the subject<sup>28</sup>. Many similar instances might be brought forward. On the other hand, there are cases in which a systematic use of cross-references by the editorial staff would have shown omission or divergence in the handling of a topic. The article *Recept*, which gives Romanes' definition of the term, does not refer to other articles. We turn, naturally, to *Intelligence in Animals*; but in that we find nothing save percept and concept. And if we then turn to *Psychology* (p. 561), we find a suggested meaning of reception and recept that ignores both Romanes and the *Recept* article.—

Turning now from quality to intensity of sensation, we find under *Threshold* a bare definition of the intensive stimulus-limen: there are no cross-references. The article *Weber's Law* (A. S. P.-P.) is practically unchanged from the ninth edition. Weber is credited with researches into aural sensations; right and wrong cases still figures as "the method of correct and incorrect instances;" in taste

<sup>28</sup> The word 'attention' occurs, it is true, in the account of certain experiments upon the auditory region of the cortex in dogs; but that is all; no attempt is made to determine the 'cortical substrate' or 'mechanism' of attention.

and smell, experiments are still "almost impossible." The author tells us to see *Psychophysics*: which we gladly do: but what is there under *Psychophysics* to see? The article *Extension* is fuller than is usual with articles of its class; but it, like the rest, falls back on the central *Psychology*. There is no article *Duration* or *Protensity*.

After sensation, *Affection*.<sup>24</sup> The affective element is recognised as co-ordinate with the sensory. The reference to Wundt's theory is misleading, since on that theory a sensation has always more than one specific affective quality; however, the writer does not repeat the mistake of the *Psychology*, and credit Wundt with the view that affection is a 'property' of sensation. The method of expression is inadequately handled. Fechner is not the writer of a 'modern text-book of psychology.'—There are no articles *Feeling*, *Emotion*, *Expression*; the expression of emotion is, as I have said, discussed under *Physiognomy*. *Mood*, *Passion*, are just defined; *Pleasure* refers us to *Psychology*, and not to *Aesthetics*, *Affection*. *Laughter* is not a psychological article.

A brief systematic article *Attention* is based on that of the ninth edition; it refers us to *Psychology*. There is not a word of description of experimental work. A new article *Apperception* notes briefly the use of the term by Leibniz, Kant, Herbart, and refers to *Attention*, *Psychology*. The reader of the article *Psychology* must be content, so far as this topic is concerned, to go away hungry: the reference itself is aggravatingly characteristic: for these secondary articles, instead of furnishing the details that the 'key' article omits, constantly fall back upon that article for further details. The new article *Conation* makes pleasure-pain a matter of sensation, referring to the experiences as 'hedonic sensations.' There is a false etymology of algedonics,—repeated, by the way, and with an additional Greek misspelling, in *Pain*. Brentano is called a 'German psychologist,' and is made the author of a *Psychologie*: would that he were! The cross-references are *Attention*, *Psychology*; not *Effort*, for there is no such article; and not *Will*, although there is a long essay with that title.

The short article *Perception* is historical, and bids us see *Psychology*. The special departments of perception fare badly. *Harmony* is written from the musical standpoint; the fusion of pure tones is not considered. *Rhythm* has nothing on perception. I have referred above to the lack of an article *Illusion*. The article *Space and Time* is not psychological. Formally, the perceptions of the various senses (as well as the sensations) are treated in the articles *Vision*, *Hearing*, etc.; the treatment is, however, far from adequate. The article

<sup>24</sup> I make no further reference to the tenth edition.

*Cinematograph* says nothing of theory: all that we have is the remark, under *Vision*, that "The cinematograph owes its effects to persistence of retinal impressions." The articles *Form*, *Fusion* are not psychological.

A new article *Abstraction* is of a general character; a new article *Apprehension* is better, but still not nearly full enough. There is no article *Assimilation*, in spite of the large place which this process occupies in Professor Ward's psychology. The writer of *Association of Ideas* retains the bulk of Croom Robertson's earlier essay;<sup>25</sup> and his additions are not particularly happy,—for under 'modern criticism' he refers only to Bradley, and under 'psychophysical researches' to James, Stout, and (misleadingly) to myself. There is no reference either to the modern introspective work or to Jung's association test. *Cognition* has four sentences. All these articles send us to *Psychology*: *Concept* now breaks the rule, and directs us simply to *Abstraction*; the article is slight. *Idea* supplements the central article by a couple of definitions; *Image* actually quotes from that article; *Imagination* falls distinctly short of it. The anonymous authors seem to have been especially troubled by the centaur: *Idea* tells us that "the idea of a centaur is a complex mental picture composed of the ideas of man and horse;" *Imagination* that "the image of a centaur is the result of combining the common percepts of man and horse." Professor Ward might have remarks to make on both these statements. *Intellect* again informs us of the contents of the general article, to which all the last-mentioned articles refer. The article *Judgment* is not psychological. There is no article *Memory*, though there is a long essay on *Mnemonics* (J. M. M.). There is no article *Thought*; both thought and judgment find passing mention under *Apprehension*.

The article *Action* is not psychological; and *Reaction* appears, so far as I have noticed, only as 'personal equation' in *Personality*.<sup>26</sup> There is no *Belief*, though the subject is mentioned under *Apprehension*, *Imagination*. There is a *Desire*:

<sup>25</sup> The reviser has crossed out Hartley's acknowledgment of indebtedness to Gay; and, in the article *Hartley*, has dropped a qualifying clause and a sentence which were valuable as giving the reader a just perspective. Condensation is all very well; but the Encyclopaedia contains such choice specimens of verbiage that these special instances of space-hunger are annoying.

<sup>26</sup> This article ends with the words: "Machines have been devised which make allowance for the error caused by the personal equation (see *Micrometer*)."

The 'make allowance' is puzzling; and I find a reference to the eye and ear method not under *Micrometer* but under *Transit Circle*.—There is, I should add, a mention of association reactions under *Association*.



'for its technical use, see *Psychology*.' For *Gesture* we must turn to *Philology*. *Inhibition* is treated only from the legal standpoint. *Personality* refers us, 'for the psychological problem,' to *Psychology*. *Self* merely says: 'For the psychological use of the term, see *Psychology*, etc.' There is no article *Temperament*. There remains the article *Will*, to which I have already referred. This article (H. H. W.) is entitled *Will, in philosophy*; and we have accordingly no more right to ask it for a volitional psychology than we have to ask the article *Space and Time, in philosophy* for a psychology of perception. It contains, indeed, a section entitled 'Modern psychology,' but this merely discusses the relation of what the writer takes to be modern psychology to the problem of free-will.<sup>27</sup> We find, then, no special article upon the psychology of volition. And this is the more to be regretted, as the note on *Motive* interprets the results of "contemporary psychological research" in an unqualified and dogmatic way.

(3) The biographical articles seem to be much better done than the general run of the departmental and topical articles that we have been discussing.<sup>28</sup> I notice, however, that the bestowal of the name 'psychologist' is capricious. *Bain* is not called a psychologist, although his "reputation rests upon his psychology." *Baldwin, Bonnet, Fortlage, Fouillée, Höfding, James, Ladd, Lazarus, Lewes*, the two *Mills, Robertson, Romanes, Steinthal, Wundt*,—no one of these men is termed a psychologist; our shelves are filled with the by-products of history, political economy, philosophy, physiology, literary criticism. Not that 'psychologist' is a term of contempt; only

<sup>27</sup> In fulfillment of the editorial programme, one might have expected that the article *Determinism* would be put into the hands of some member of the Freudian school, or of someone who knew how to turn the *Aufgabe*-psychology to deterministic account. It is, however, an unsigned and non-committal article.

<sup>28</sup> There is still room for criticism, formal and material. Thus the revised bibliography of Adamson's *Beneke* is allowed to retain the statement: "In England, perhaps, the only writer who shows traces of acquaintance with his works is J. D. Morell." True when the article was written, it is not true today. And a question of literary ethics: Should a dead author's initials be appended to an article which has been—even slightly—changed, and whose bibliography contains works published after his death?

On the other hand, the unsigned article *Brown*, which is in all essentials a condensation of the article by Adamson in the ninth edition, omits Adamson's list of Brown's 'positive contributions to mental science.' On this topic Adamson was peculiarly qualified to speak, and the information would have been useful to psychological readers.

its application is casual. *K. G. Carus*<sup>29</sup> is psychologist and physiologist, *Huarie* is physician and psychologist, *Mach* is physicist and psychologist (though surely Mach, outside of physics, is an *Erkenntnistheoretiker*), *Münsterberg* is psychophysiologist, *Gurney*, *Ribot*, *Sully* are psychologists, *Waitz* is anthropologist and psychologist, *Ward* is psychologist and metaphysician. How purely casual the distribution is, we see from the article *Fechner*; the founder of psychophysics is termed 'German experimental psychologist.'

Of psychologists living when the text of the Encyclopaedia was prepared, Great Britain has mention of *Sully* and *Ward*; Stout, whose text-books and whose editorship of *Mind* make him, probably, the most influential of living English psychologists, has no article. France has *Fouillée* and *Ribot*,<sup>30</sup> Binet, whose untimely death we are now deploring, and Pierre Janet had earned a mention. Germany has *Wundt*, and a half of *Münsterberg*: that is all. Ebbinghaus, Lipps, G. E. Müller, Stumpf,<sup>31</sup> and on the applied side Meumann and Stern, might have been noticed; the omission of Stumpf is unpardonable. Austria has *Mach*; Brentano and Freud, to say the least, should have found a place. Denmark has *Höffding*. The United States has *Baldwin*, *James*, *Ladd*, and a half of *Münsterberg*. All these deserve mention; but then, indisputably, so does Stanley Hall.

The articles vary in merit. That on *Ward* strikes me as, of its kind, perfect; it tells, in brief compass, just what one wishes to know of its subject. That on *James* is inadequate; that on *Wundt* needs an adjective far stronger than inadequate.<sup>32</sup>

<sup>29</sup> The initials should be C. G. The correction is trivial, as the name in question is *Carl*; but it gives me an opportunity to remark that the initials of the Encyclopaedia—so far as psychology is concerned—are not always trustworthy.

<sup>30</sup> I am glad to be able to place Professor Ribot here; the Encyclopaedia dates his death 1903.

<sup>31</sup> So far as I have observed, Stumpf and the *Tonpsychologie* receive textual mention only in the article *Aesthetics*.

<sup>32</sup> There are articles on *Charcot*, *Galton*, *Myers*, *Porter*. It may save some reader trouble if I add that I have looked in vain for Aubert, Delboeuf, Drobisch, Hering, Horwicz, Meinong, Mosso, Pearson, Richet, Sergi, Tetens, Volkmann, E. H. Weber. There is no attempt at a psychological appraisal of *Crusius*, *Priestley*, *Reimarus*, *J. L. Vives*; the latter's *De anima et vita* is not named. In truth, psychological perspective, whether geographical or temporal, is sadly lacking.

The article *Fechner* gives a brief sketch of Fechner's psychophysical and philosophical system, but refers neither to *Weber's Law* nor to *Metaphysics*. The article *Wundt* mentions Wundt's *System*, but fails to inform the reader that its contents are discussed under *Metaphysics*.

My general impression, after this survey, is that the new *Britannica* does not reproduce the psychological atmosphere of its day and generation. So far as psychology is concerned, the Editor protests a great deal too much. "The single-treatise plan . . . is not only cumbrous in a work of reference, but lent itself to the omission altogether, under the general heading, of specific issues which consequently received no proper treatment at all anywhere in the book; whereas the dictionary plan, by automatically providing headings throughout the work, under which, where appropriate, articles of more or less length may be put, enables every subject to be treated, comprehensively or in detail, yet as part of an organic whole, by means of careful articulation adapted to the requirements of an intelligent reader." "The whole work—and not only the unsigned articles, many of which indeed have . . . high authority behind them—passed through the detailed scrutiny of the editorial staff, whose duty it was to see that it provided what those who used any part of the book could reasonably expect to find, to remedy . . . 'inconcinities' . . . , and to secure the accuracy in the use of names, the inclusion of dates, and similar *minutiae*, which is essential in a work of reference." Yet we still find the single-treatise plan; we still find the 'omission altogether' of important issues; we still find 'inconcinities,' not only of secondary articles with main article, but of two adjacent columns of the same article; and we find men signing articles and writing books some years after the recorded date of their deaths. Despite the halo of authority, and despite the scrutiny of the staff, I do not hesitate to say that the great bulk of the secondary articles in general psychology—articles of the type of *Affection*, *Apperception*, *Cognition*, *Intellect*—are not adapted to the requirements of the intelligent reader; and that many of them might as well have been left out. *Apperception*, for instance, is a topic that must be treated historically, and must be treated at some little length, if it is to be understood. The Encyclopaedia prides itself on its historical spirit: "all subjects are treated in these volumes not only on their merits, but as in continual evolution, the successive stages in which are of intrinsic interest on their own account, but also throw light on what goes before and after." Now turn to *Apperception*: consider how much you are told, in what technical terms, with what historical setting, with what kind and number of cross-references! And *Apperception* is a favorable specimen of its class.

I am not arguing that the *Britannica* should satisfy the claims of the specialist,—though there is specialism and to spare in articles which cover other fields of knowledge; I am arguing

that it lacks psychological atmosphere, that it has failed to reproduce the psychological spirit of its time. In America, we are told, "psychological study . . . has become largely a matter of experiment and apparatus." Now the work is dedicated, jointly, to the king of Great Britain and Ireland and the president of the United States; and the Editorial Introduction makes much of the adequacy of the new edition to American circumstances and needs. Moreover, "the object of the present work is to furnish accounts of all subjects which shall really explain their meaning to those who desire accurate information." Appears, then, the intelligent reader,—who asks for an account of this German-American movement in psychology, wishes at least to acquaint himself with its broader features; asks also for the meaning of the movement, wishes to understand the forces that lay behind it. What does he find? He finds—if it is not presumptuous to give my own impression—that the high authorities and the scrutinising members of the staff are well aware of the existence of laboratories, of activity in experiment, of publication of researches; but that they do not know any of these things at first hand. They are therefore a little timid, and they are also a little superior; they make general reference to the movement, where reference seems to them to be in place, but they add a wise word of conservative caution: 'All this is noteworthy,' they say in effect, 'but you must remember that experiments in the laboratory are, after all, artificial affairs; your subject there can never be quite natural.' The intelligent reader, being intelligent, is not satisfied; it occurs to him that the men who use a tool are likely to be aware of its limitations as well as of its scope and powers; and he asked for information and explanation, not for a bare reference and an expression of secondhand opinion. I have already quoted a characteristic sentence from the article *Child*. "Into the psychological characteristics and development of the child and all the interesting educational problems involved it is impossible to enter here." Why? for lack of space? But a whole quarter-page can be spared for a cut of the dandelion. Surely not because the subject is unimportant? Surely not because the intelligent reader will not be forthcoming? Surely not because expert guidance may be dispensed with? <sup>33</sup> Why, then?

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<sup>33</sup> Here, indeed, is the usual caution: "There is often a tendency in modern 'child-students' to interpret the phenomena exhibited by a particular child with a *parti pris*, or to exaggerate child-study—which is really interesting as providing the knowledge of growth towards full human equipment—as though it involved the discovery of some distinct form of animal, of separate value on its own account." I suppose that we can find misdirected enthusiasm along all

The same general criticism may be advanced from another side. I have already paid my tribute of admiration to Professor Ward's *Psychology*, and Part 77 of the old *Britannica* has been familiar to me for more years than I like to count. But it is to be remembered that the *Psychology*, close packed as it is, is still no more than the outline of a system; printed in ordinary text-book style, it would fill, I suppose, less than 300 pages. It is not, then, to be compared with James' *Principles*, or Sully's *Human Mind*, or Ladd's *Psychology Descriptive and Explanatory*, or Jodl's *Lehrbuch*; "much that belongs to a full exposition is," as Bain remarked, "necessarily omitted;" and there are not a few "subtle disquisitions" which demand that elsewhere "illustration be duly expanded." I have tried to show that the secondary articles, considered as a whole, neither fill the gaps nor furnish the illustrations. But further: as there is now a large body of experimental work which bears upon Professor Ward's personal theories, so must these theories themselves take account of the experimental work which lies beyond them,—which has dealt with psychological problems as they arose to other points of view. Psychology today is less a coherent system of knowledge than a certain attitude of mind over against a vast collection of special investigations. And a systematic psychology which has not changed in a quarter of a century must either have been phrased, at the outset, in terms so large that the facts of observation are merely blanketed, or must hold its own by force of individual conviction against other systems that have like claims upon the impartial student. I need not say that the system of the *Psychology* is of the latter type. Professor Ward has shown, time and again, that he can come to close quarters with observation; certain results of his systematic thinking have been widely accepted; certain others have, as I think, been superseded. Here, again, therefore, was a pointer for the secondary articles. An article *Attention*, that should do full justice to the experimental situation, might yet keep in touch with the doctrine of the 'single subjective activity;' an article *Feeling*, with the doctrine of impresentability; an article *Action*, with subjective selection. I should be surprised to learn that Professor Ward's dissatisfaction with the secondary articles is not as deep as my own.

Who, then, it may be asked, was in charge of the psycho-

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lines of human endeavor. But imagine yourself enquiring the way to a certain place, and being told: You are on the wrong path, but it is impossible here to put you right! And imagine this reply from an official whose business it is to direct you!

logical portion of the Encyclopaedia? We are not told. The Editorial Introduction gives a long list of specialists who assisted the Editor on all sorts of subjects,—natural science, art, and literature, history, applied science, mathematics, philology and languages, and so forth; but in all this ‘college of research’ there is no psychologist. The Introduction also names the members, English and American, of the editorial staff. I failed to recognise a psychologist; but, to make assurance doubly sure, I traced the departments for which a single authority is declared responsible, and I find that psychology is, in fact, not among them. The inference seems to be that no one in particular was in charge of the psychological contributions to the Encyclopaedia. If this inference is just,—if the failure to mention a responsible editorial assistant is not simply an oversight,—then the Editor’s attitude to psychology is made clear, and the defects and errors which I have pointed out, glaring as many of them are, become intelligible. But a twentieth-century Encyclopaedia that has no psychologist either upon its advisory board or upon its editorial staff is, in so far, an anachronism.

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#### APPENDIX

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| A. G.       | Major A. G. F. Griffiths, late H. M. Inspector of Prisons.                             |
| A. L.       | A. Lang, British man of letters, author of works on folklore, primitive religion, etc. |
| A. M.       | A. Macalister, Professor of Anatomy, University of Cambridge.                          |
| A. S. P.-P. | A. S. Pringle-Pattison, Professor of Logic and Metaphysics, University of Edinburgh.   |
| B. K.       | B. Kidd, author of <i>Social Evolution</i> , etc.                                      |
| C. L. M.    | C. LL Morgan, Professor of Psychology, University of Bristol.                          |
| C. P.       | C. Pulfrich, on staff of C. Zeiss Factory, Jena.                                       |
| E. B.       | E. Bramwell, Asst. Physician, Royal Infirmary, Edinburgh.                              |
| E. B. T.    | E. B. Tylor, Professor of Anthropology, University of Oxford.                          |
| E. M. S.    | Mrs. Henry Sidgwick, Principal of Newnham College, Cambridge.                          |
| F. P.       | F. Podmore, author of <i>Modern Spiritualism</i> , etc.                                |
| F. Y. E.    | F. Y. Edgeworth, Professor of Political Economy, University of Oxford.                 |
| H. H. W.    | Rev. H. H. Williams, Lecturer in Philosophy, Hertford College, Oxford.                 |
| J. B. T.    | Sir J. B. Tuke, Medical Director of New Saughton Hall Asylum, Edinburgh.               |
| J. E. C.    | Rev. J. E. Carpenter, Principal of Manchester College, Oxford.                         |
| J. G. M.    | J. G. McKendrick, Emeritus Professor of Physiology, University of Glasgow.             |

- J. M. J. Macpherson, formerly Inspector-General of Hospitals, Bengal.
- J. M. M. J. M. Mitchell, Lecturer in Classics, E. London College.
- J. R. C. J. R. Cotter, Asst. to the Professor of Physics, Trinity College, Dublin.
- J. S. J. Sully, Emeritus Grote Professor of the Philosophy of Mind and Logic, University College, London.
- J. W. J. Ward, Professor of Mental Philosophy, University of Cambridge.
- J. We. J. Welton, Professor of Education, University of Leeds.
- L. C. B. L. C. Bruce, author of *Studies in Clinical Psychiatry*.
- N. W. T. N. W. Thomas, Govt. Anthropologist to Southern Nigeria.
- R. R. M. R. R. Marett, Reader in Social Anthropology, University of Oxford.
- S. C. S. Colvin, Keeper of Prints and Drawings, British Museum.
- W. D. W. W. D. Whitney, late professor of Sanskrit and Comparative Philology, Yale University.
- W. McD. W. McDougall, Wilde Reader in Mental Philosophy, University of Oxford.

*Note I.*—The Index Volume comes to hand as I am correcting the galley proof of this review. It contains (pp. 939 f.) an alphabetical list of the articles in Philosophy and Psychology; Subjects and Biographies are separated; Philosophy and Psychology themselves, despite the article *Philosophy*, are thrown together. It seems that I have found all the psychological articles, but have missed half-a-dozen that deal with Psychical Research and Occultism.

I have worked out the references under the topical heading Psychology (p. 640), and under a number of special headings; there has not been time for a thorough search. I find that the general heading gives the sub-headings *Ethics, relation to; Logic, relation to; Metaphysics, relation to*,—and as I have not mentioned in the text any discussion of the relation of psychology to other disciplines, I am glad to repair the neglect here. The article *Ethics*, then, devotes twenty lines to psychology; ethics, we are told, must hold its ground against the intrusion of ideas from alien sources, and the conviction of 'the ultimate character of moral obligation' "may produce quite unforeseen results for psychology." *Logic* informs us that metaphysics, logic and psychology form together a 'triad of sciences;' the interdependence is "so intimate that one sign of great philosophy is a consistent metaphysics, psychology and logic." A paragraph under *Kant's Logic* treats of the post-Kantian psychological logic. *Metaphysics* teaches that "to proceed from psychology to metaphysics is to proceed from the less to the more known; and the paradoxes of psychological have caused those of metaphysical idealism." These brief notes must suffice.

The Preface admits that "every index has its humors:" here is an illustration. There is a sub-heading *Pioneers of Physiological Psychology*, and the names to which reference is made are A. Bain, F. E. Beneke, and J. Huarte.

*Note II.*—I am informed that the error in the statistical tables under *Insanity* appears in the English edition, and was discovered and corrected by the New York office after the American reprinting had begun. Early American sets thus contain it, while later sets are correct.